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### 31. A NOTE ON THE OCCURRENCE OF *LISTERA TENUIS* LINDL. (ORCHIDACEAE) IN KUMAON HIMALAYA<sup>1</sup>

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Deva and Naithani (1986), while describing the orchid flora of the north-west Himalaya, reported *Listera tenuis* Lindl. from Uttarakhand. While this species has been collected from subalpine and alpine areas of Chamoli district in Garhwal Himalaya, their report of this species from Kumaon Himalaya is based on a specimen reported to have been collected from Thal in district Pithoragarh, at an altitude of about 1,000 m. Other than this there are no other collections of this species from Kumaon Himalaya in the Indian Herbaria. As all the species of this genus grow at higher elevations, i.e., between 2,100 and 4,000 m, in north-west Himalaya, Deva and Naithani (1986) doubted the occurrence of this species at lower altitudes, and suggested further collections of this species to confirm its occurrence in Kumaon Himalaya. The same comment was repeated by Pangtey *et al.* (1991) due to non-availability of any collection of this species from Kumaon Himalaya.

During the course of an orchid exploration in Uttarakhand, a few specimens of this orchid were collected

from upper Gori valley in Kumaon Himalaya. In this note we confirm the occurrence of this species at higher altitudes of Kumaon Himalaya along with a brief note on its habitat. It can be stated that the earlier collection of this species from Thal may be erroneous. Voucher specimens are deposited in the herbarium, Wildlife Institute of India (WII), Dehradun.

**Ecology:** A rare ground orchid usually in the subalpine and alpine areas among shrubs. Only 4-5 individuals were seen under *Rhododendron campanulatum* near Tola village (3,500 m) in the upper Gori valley.

**Specimen examined:** Kumaon: Pithoragarh district in upper Gori valley J.S. Jalal 13945, WII.

**Distribution:** INDIA (Garhwal, Kumaon, Sikkim, Arunachal Pradesh), Nepal, Tibet.

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### 32. *SYNOTIS ALATUS* (WALL. EX DC.) JEFFERY (ASTERACEAE) – A NEW RECORD FOR ARUNACHAL PRADESH<sup>1</sup>

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The genus *Synotis* has about five species, which are found mostly in the eastern and western Himalaya (Hooker 1981). This information is based on a survey and collection of plant material by the author and through consultation

with the herbarium, Botanical Survey of India northern circle, Dehradun. During 2001, while conducting a survey and collection of medicinal plants growing in the Bomdila and Twang districts of Arunachal Pradesh, I came across a plant

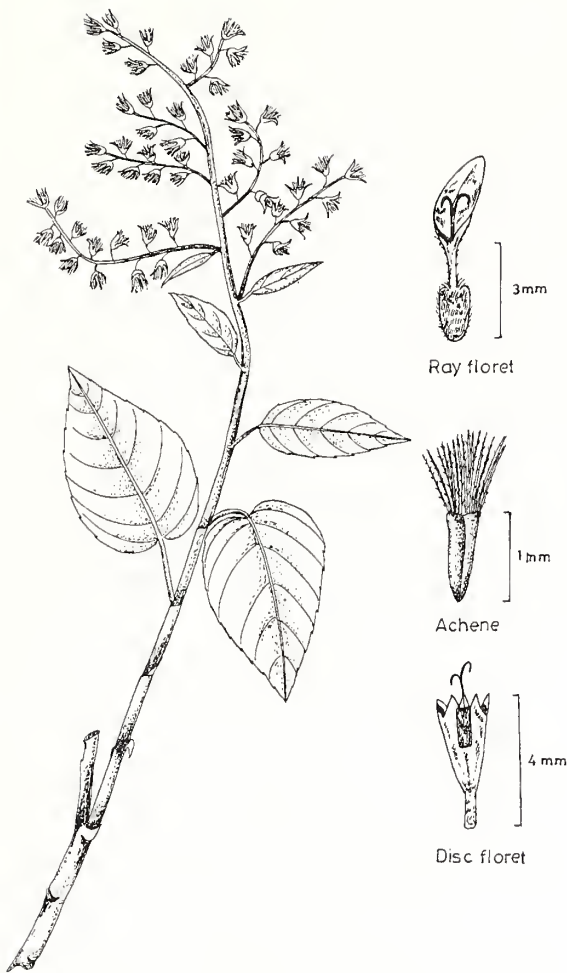


Fig 1: *Synotis alatus* (Wall. ex DC.) Jeffrey

at Twang near the forest road. Upon consulting literature, I found that the species *Synotis alatus* had neither been

reported nor collected from this region to date (Kanjilal *et al.* 1934-1940; Hajra *et al.* 1995). Hence, this is a new record for the state of Arunachal Pradesh.

The description along with a line diagram (Fig. 1) of its habit, habitat, flowering and fruiting time, and distribution of the taxon in India have been elaborated.

***Synotis alatus*:** (Wall. ex DC.) Jeffrey & Chen, Y.L. in Kew Bull. 39 (2): 308. 1984. (Asteraceae); Hajra *et al.* Fl. of India 13: 287, 1995. *Senerio alatus* Wall. ex DC.; Hook. f., Fl. Brit. India 3: 353, 1881.

A perennial grey tomentose rhizomatous herb, up to 80 cm long, stout, rhizome woody. Leaves subrosulate, ovate-oblong, sessile, acute-acuminate, base sub-auriculate, 12-19x7-9cm, hairy beneath, uppermost leaves smaller in size at base, sessile. Head yellow, inconspicuously radiate, c. 5-7 cm long, involucre cylindrical, densely hairy; bracts 5-7, linear-lanceolate, 7x1 mm. Ray florets 2-3, 2-3 mm long, unequal, shorter than styles; disc florets c. 4 mm long. Achenes greyish, c. 1 mm long, pubescent; pappus of pale, scabrid hairs, c. 4.5 mm long.

**Specimens examined:** Twang forest Arunachal Pradesh. Field no. CIMAP, 10825.

**Fl. & Fr.:** October-December.

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### 33. *HERNIARIA CINEREA* DC. (CARYOPHYLLACEAE) – A NEW RECORD FOR INDIA<sup>1</sup>

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Genus *Herniaria* L., with 48 species (Mabberley 1997), is distributed mainly in Europe, Africa and Central Asia. Its eastward distribution is up to India, whereas westward it

extends up to South America. In India, the genus is represented by three species, namely *H. hirsuta* L., *H. incana* Lam. and *H. cachemiriana* Gay, distributed mainly in northern India